

**Tooling Research and Application Department**  
**Dr. Viktor P. Astakhov**

**Part and Feature:** Threading tap by XXXXXXXX

**Problem:** Broken tool.

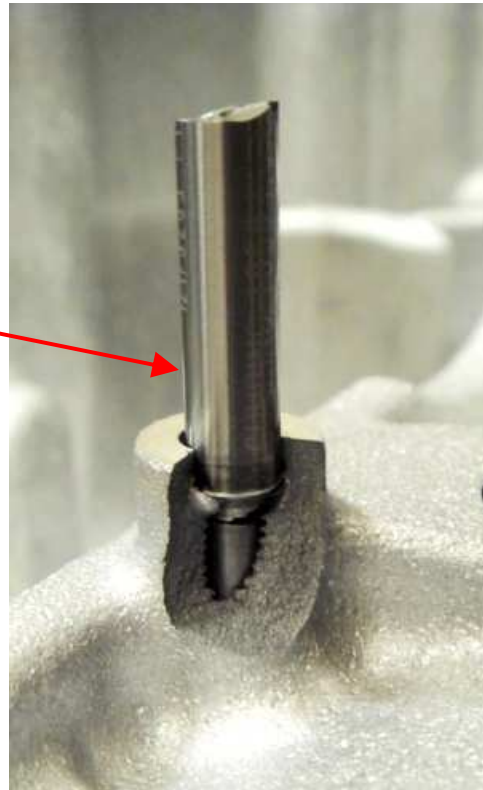
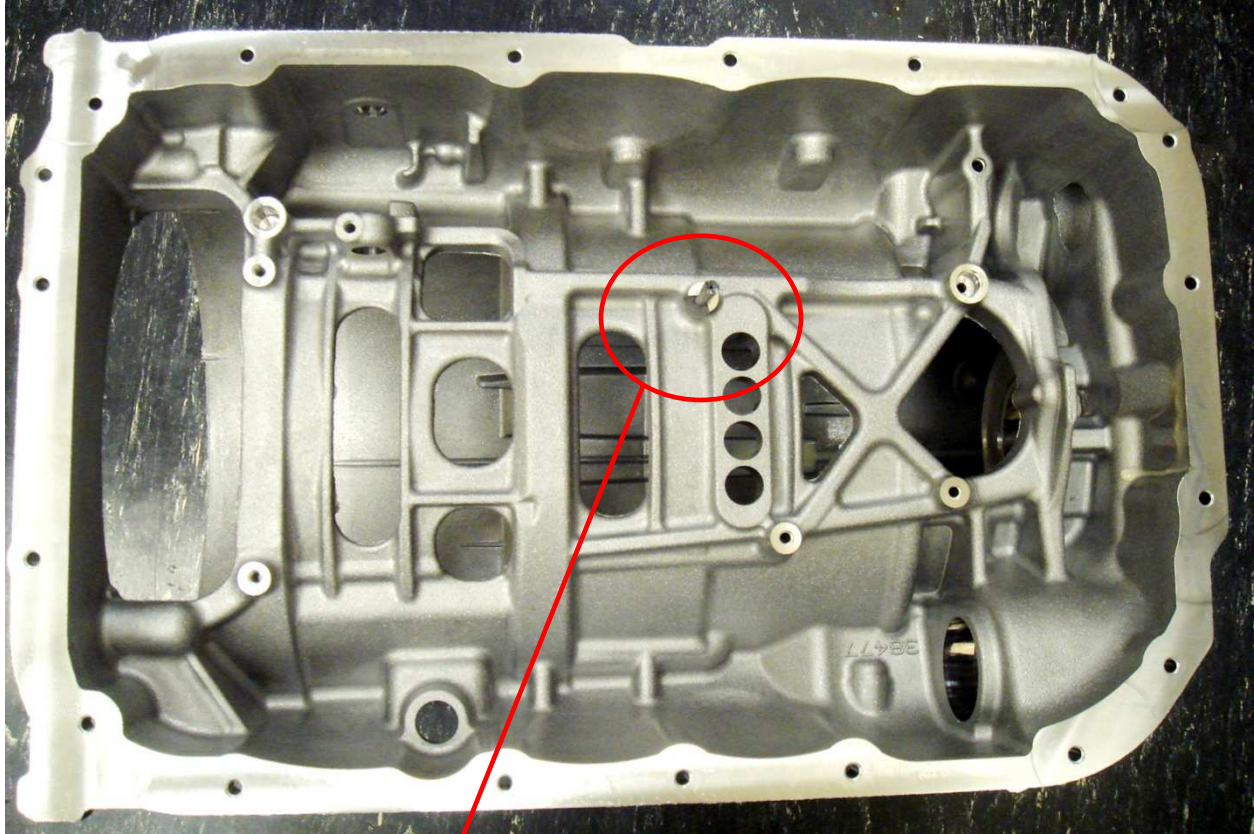
### **Short analysis**

Figure 1 shows the failed tap that stuck in the case. As clearly seen, the shank of the broken tap interferes with the hole being tapped. This interference caused tap breakage. Analysis of the tap drawing (Figure 2) shows that the neck length (the distance from the end of the tap to the shank) should be 36mm. Moreover, one of the production notes on the drawing states **“Extend neck length per print.”**

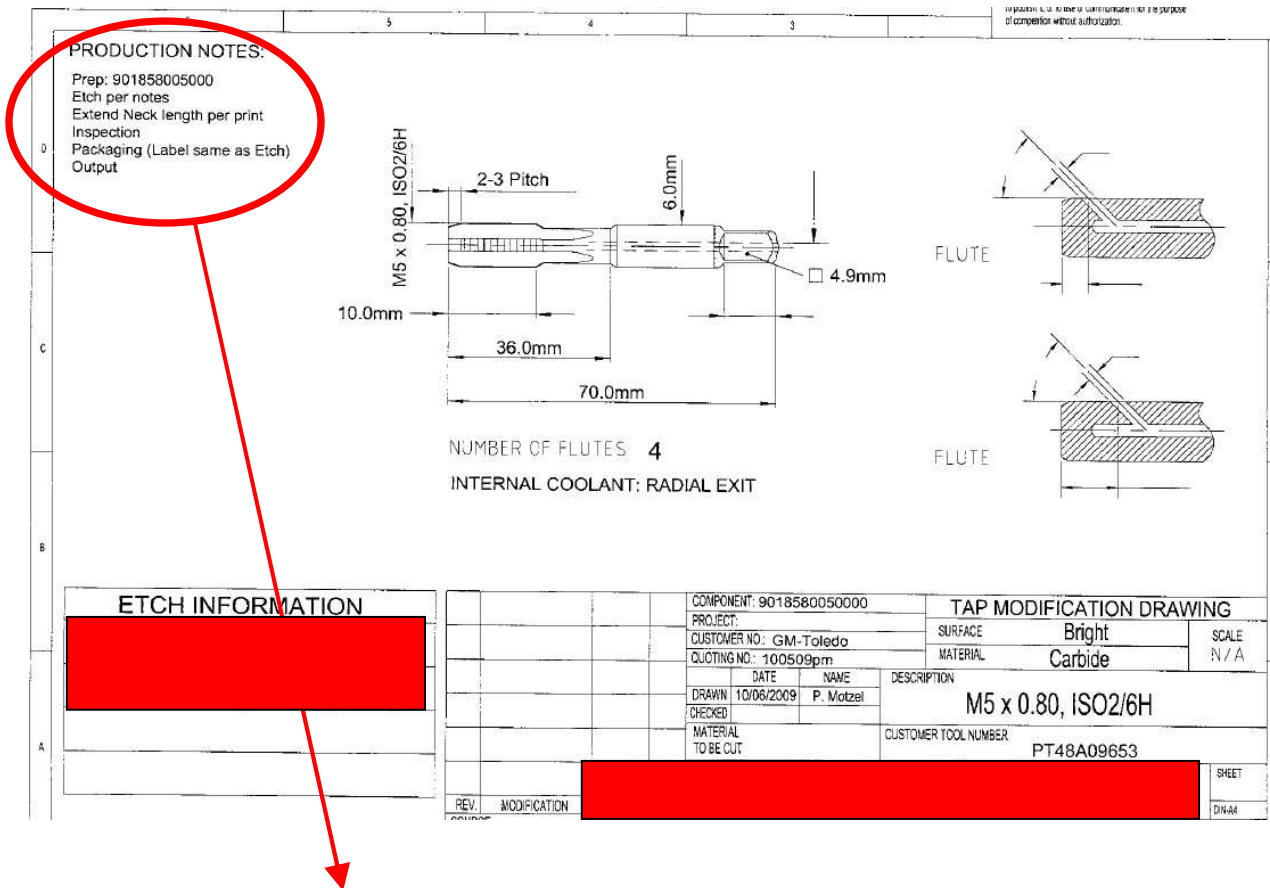
The measurement of the actual tap set for the operation showed that the neck length of this tap is 26mm. Figure 3 shows the comparison of the actual tap having neck length of 26 mm and the correct tap having neck length of 36 mm according to the drawing shown in Fig.2. Therefore, the **root cause** of the problem is insufficient neck length of the tap. In other words, the taps sent to PSMi are not according to the drawing.

**Suggestions;**





**Figure 1.** Broken tab in the MC



# PRODUCTION NOTES:

Prep: 901858005000

Etch per notes

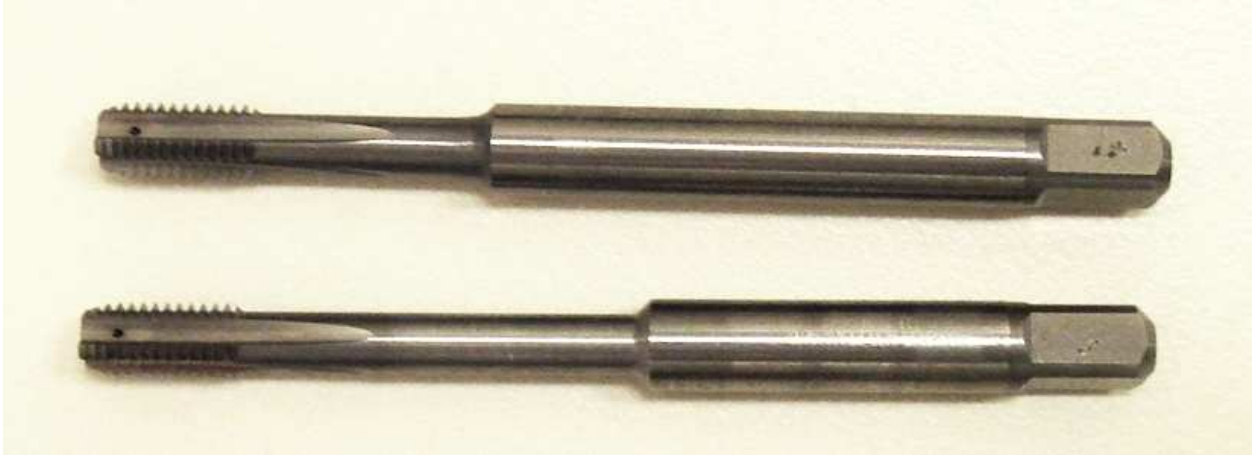
Extend Neck length per print

Inspection

Packaging (Label same as Etch)

Output

Figure 2. Tool drawing



**Figure 3.** The actual (above) tap having neck length of 26 mm and the correct tap (below) having neck length of 36 mm according to the drawing shown in Fig.2